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PTO/SB/21 (09-06)

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

9

Application Number

10/708,983

Filing Date

04/05/2004

First Named Inventor

Jui-Tsen Huang

Art Unit

1756

Examiner Name

DUDA, KATHLEEN

Attorney Docket Number

NAUP0487USA1

ENCLOSURES (Check all that apply)



Fee Transmittal Form



Fee Attached



Amendment/Reply



After Final



Affidavits/declaration(s)



Extension of Time Request



Express Abandonment Request



Information Disclosure Statement



Certified Copy of Priority Document(s)



Reply to Missing Parts/
Incomplete Application



Reply to Missing Parts
under 37 CFR 1.52 or 1.53



Drawing(s)



Licensing-related Papers



Petition



Petition to Convert to a
Provisional Application



Power of Attorney, Revocation
Change of Correspondence Address



Terminal Disclaimer



Request for Refund



CD, Number of CD(s) _____

☐ Landscape Table on CD



After Allowance Communication to TC



Appeal Communication to Board
of Appeals and Interferences



Appeal Communication to TC
(Appeal Notice, Brief, Reply Brief)



Proprietary Information



Status Letter



Other Enclosure(s) (please identify
below):

1. A copy of the Front Page of Patent.

2. A copy of Fee Transmittal submitted on
11/21/2006.

3. Copies of the Notice of Recordation
dated 09/26/2006

4. A copy of the Certificate of Correction

Remarks

Request for Certificate of Correction of Office Mistake

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name

North America Intellectual Property Corporation

Signature

Winston Hsu

Printed name

Winston Hsu

Date

JAN 26 2007

Reg. No.

41,526

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature

Stephanie Lai

Typed or printed name

Stephanie Lai

Date

JAN 26 2007

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Certificate
JAN 31 2007
of Correction
FEB - 1 2007



PTO/SB/17 (07-06)

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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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Effective on 12/08/2004.

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL

For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27TOTAL AMOUNT OF PAYMENT (\$)**0.00****Complete if Known**

Application Number	10/708,983
Filing Date	04/05/2004
First Named Inventor	Jui-Tsen Huang
Examiner Name	DUDA, KATHLEEN
Art Unit	1756
Attorney Docket No.	NAUP0487USA1

METHOD OF PAYMENT (check all that apply)☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____☒ Deposit Account Deposit Account Number: **50-3105** Deposit Account Name: **North America Intellectual Property Corporation**

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below☐ Charge fee(s) indicated below, **except for the filing fee**☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17☒ Credit any overpayments**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Small Entity	Fee (\$)	Small Entity	Fee (\$)	Small Entity	Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES**Fee Description**

Each claim over 20 (including Reissues)

Fee (\$)	Small Entity
50	25

Each independent claim over 3 (including Reissues)

200	100
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Multiple dependent claims

360	180
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Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
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Multiple Dependent Claims	
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- 20 or HP =	x	=
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Fee (\$)	Fee Paid (\$)
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HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
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- 3 or HP =	x	=
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HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
--------------	--------------	--	----------	---------------

- 100 =	/ 50	(round up to a whole number)	x	=
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4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Fees Paid (\$)

Other (e.g., late filing surcharge): _____

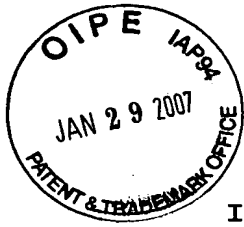
SUBMITTED BY

Signature	<i>Winston Hsu</i>	Registration No. (Attorney/Agent)	41,526	Telephone	3027291562
Name (Print/Type)	Winston Hsu			Date	JAN 26 2007

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FEB 1 2007



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No. : US 7,157,211 B2 Issue Date : Jan. 2, 2007
Serial No. : 10/708,983 Filing Date : Apr. 5, 2004
Inventor : Jui-Tsen Huang
Docket No. : NAUP0487USA1

Title: Method of fabricating a semiconductor device

To: Commissioner for Patents
 P.O. BOX 1450
 Alexandria, VA 22313-1450

Subject: Request for Certificate of Correction of Office
 Mistake

The residence of the Assignee listed on the front page of the Patent is incorrect (Attachment 1). Documents on record indicate this as an office mistake of consequence.

The applicant hereby requests that a Certificate of Correction be issued under 37 CFR 1.322 to correct the residence of the Assignee from "Hsin" to "Hsin-Chu" which was correctly listed on the Fee Transmittal submitted on 11/21/2006 (Attachment 2) and the Notice of Recordation dated 09/26/2006 (Attachment 3).

FEB - 1 2007

Sincerely yours,

Winston Hsu

Date: JAN 26 2007

Winston Hsu, Patent Agent No. 41,526

P.O. BOX 506, Merrifield, VA 22116, U.S.A.

Voice Mail: 302-729-1562

Facsimile: 806-498-6673

e-mail : winstonhsu@naipo.com

Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 13 hours behind the Taiwan time, i.e. 9 AM in D.C. = 10 PM in Taiwan.)

FEB 1 2007

Please correct the residence of the assignee
from "Hsin" to "Hsin-Chu"



US007157211B2

(12) **United States Patent**
Huang

(10) **Patent No.:** **US 7,157,211 B2**
(45) **Date of Patent:** **Jan. 2, 2007**

(54) **METHOD OF FABRICATING A
SEMICONDUCTOR DEVICE**

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,978,594 A * 12/1990 Bruce et al 430/14
5,441,849 A 8/1995 Shiraishi et al 430/296

* cited by examiner

Primary Examiner—Kathleen Duda
(74) *Attorney, Agent, or Firm*—Winston Hsu

(75) **Inventor:** **Jui-Tsen Huang, Taipei (TW)**

(73) **Assignee:** **United Microelectronics Corp., Hsin**
(TW)

(*) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(h) by 207 days.

(21) **Appl. No.:** **10/708,983**

(22) **Filed:** **Apr. 5, 2004**

(65) **Prior Publication Data**
US 2004/0191699 A1 Sep. 30, 2004

Related U.S. Application Data
(62) Division of application No. 10/063,307, filed on Apr
10, 2002.

(51) **Int. Cl.**
G03F 7/26 (2006 01)

(52) **U.S. Cl.** **430/316; 430/311**

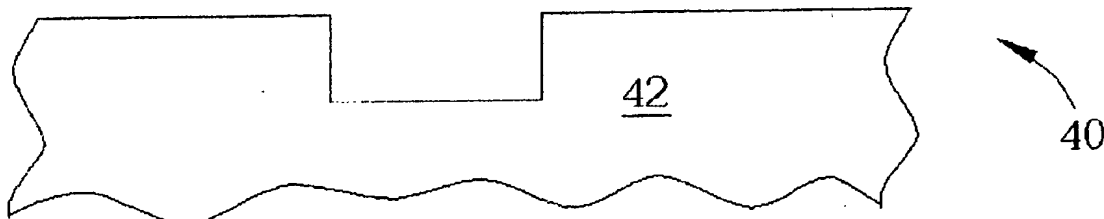
(58) **Field of Classification Search** **430/311,**
430/316

See application file for complete search history.

ABSTRACT

A method of fabricating a semiconductor device. A first organic layer, a sacrificial layer, and a second organic layer are sequentially formed on a substrate. Then, a photolithography process is performed for forming a predetermined pattern in the second organic layer. Thereafter, the second organic layer is utilized as an etching mask for etching the sacrificial layer till a surface of the first organic layer is exposed, thus transferring the predetermined pattern to the sacrificial layer. Subsequently, the sacrificial layer is utilized as an etching mask for etching the first organic layer till a surface of the substrate is exposed, thereby transferring the predetermined pattern to the first organic layer. Then, the sacrificial layer and the first organic layer are utilized as an etching mask for etching the substrate, thereby transferring the predetermined pattern to the substrate. Finally, the first organic layer is removed by use of plasma.

12 Claims, 10 Drawing Sheets



BEST AVAILABLE COPY

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Attachment 2

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 or **Fax** (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

027765 7590 09/08/2006

NORTH AMERICA INTELLECTUAL PROPERTY
 CORPORATION
 P.O. BOX 506
 MERRIFIELD, VA 22116

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Certificate of Mailing or Transmission

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Stephanie Lai	(Depositor's name)
<i>Stephanie Lai</i>	(Signature)
11/21/2006	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,983	04/05/2004	Jul-Tsen Huang	NAUP0487USA1	2982

TITLE OF INVENTION: Method of fabricating a semiconductor device

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$0	\$1700	12/08/2006
EXAMINER	ART UNIT	CLASS-SUBCLASS				
DUDA, KATHLEEN	1756	430-316000				

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Winston Hsu

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

UNITED MICROELECTRONICS CORP.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

No.3, Li-Hsin Road 2, Science-Based Industrial Park, Hsin-Chu City Taiwan,
 R.O.C.

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-3105 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature

Winston Hsu
 Winston Hsu

Date 11/21/2006

Registration No. 41,526

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

SEPTEMBER 26, 2006

PTAS

800027134A

NORTH AMERICA INTELLECTUAL PROPERTY CORP
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MERRIFIELD, VA 22116

800027134A

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RECORDATION DATE: 09/26/2006

REEL/FRAME: 018299/0809
NUMBER OF PAGES: 2

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).
DOCKET NUMBER: NAUP0487USA1

ASSIGNOR:
HUANG, JUI-TSEN

DOC DATE: 01/10/2002

ASSIGNEE:
UNITED MICROELECTRONICS CORP.
NO.3, LI-HSIN ROAD 2, SCIENCE-
BASED INDUSTRIAL PARK
HSIN-CHU CITY, TAIWAN

SERIAL NUMBER: 10708983

FILING DATE: 04/05/2004

PATENT NUMBER:

ISSUE DATE:

TITLE: METHOD OF FABRICATING A SEMICONDUCTOR DEVICE

FEB 1 2007

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9/26/06 6:37

PAGE 003/004

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018299/0809 PAGE 2

ASSIGNMENT SERVICES BRANCH
PUBLIC RECORDS DIVISION

FEB 1 2007

Attachment 4

PTO/SB/44 (04-05)
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(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 1 of 1

PATENT NO. : 7,157,211 B2
APPLICATION NO.: 10/708,983
ISSUE DATE : Jan. 2, 2007
INVENTOR(S) : Jui-Tsen Huang

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the title page item(73), correct the residence of the assignee from "Hsin" to "Hsin-Chu".

MAILING ADDRESS OF SENDER (Please do not use customer number below):

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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